



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/770,919 | 02/03/2004 | Chad A. Cobbley | MICS:0078-5 | 1688 |
| 52142 7590 02/05/2009 FLETCHER YODER (MICRON TECHNOLOGY, INC.) P.O. BOX 692289 HOUSTON, TX 77269-2289 | | | | |
| EXAMINER | | | | |
| MITCHELL, JAMES M | | | | |
| ART UNIT | | PAPER NUMBER | | |
| 2813 | | | | |
| MAIL DATE | | DELIVERY MODE | | |
| 02/05/2009 | | PAPER | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/770,919

Applicant(s)

COBBLEY ET AL.

Examiner

JAMES M. MITCHELL

Art Unit

2813

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 9-13, 15, 16 and 18-21 is/are pending in the application.
- 4a) Of the above claim(s) 3, 4, 16 and 18-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 5-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This office action is in response to applicant's request for continued examination filed November 4, 2008.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1, 2 and 5-15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The definition of a substrate is a supporting material on or **in which** the components of an integrated circuit are **fabricated or attached**, or an insulating layer that components are formed on; therefore, since the dies contain circuits formed in semiconductor substrates the stack includes a substrate. Alternatively, the die stacks are formed on/ attached to a holder albeit temporarily and therefore the holder is still within the definition of a substrate. As such, the claim is not enabled, since one skilled in the art to which it pertains, or with which it is most nearly connected, cannot make a stack formed on *what it excludes*.

Claim Rejections - 35 USC § 102

Art Unit: 2813

4. The following is a quotation of the appropriate paragraphs of 35

U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 5, 10 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Ball (U.S. 7,371,612) .

6. The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

7. Ball (e.g. Fig. 3, 5, 9) discloses:

(cl. 1, 10) a temporary holding surface (302) having a plurality of semiconductor die stacks thereon (104/104; Fig. 5), the temporary holding surface configured to temporarily hold the die stacks, wherein each of the plurality of semiconductor die stacks include at least two semiconductor die (Fig. 5) permanently coupled together by an adhesive (206; e.g. cured; Col. 4, Lines 10-18)) , wherein the stack of at least two semiconductor die comprise KGD/ each of the die stacks are

Art Unit: 2813

KGD (e.g. testing of wafer provide dies that good which are subsequently mounted on a board etc. this also includes an embodiment where all the stacks are good) and wherein the plurality of semiconductor die stacks do not include a lead frame (e.g. none shown) or a substrate (e.g. dies have no discrete substrate other than their own Si, substrate body);

(cl. 5, 11) at least three dies connected by adhesives (2; Fig. 9);

(cl. 9, 15) one of at least two dies comprise a memory die (Col. 5, Lines 35-39).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2813

10. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over.

Ball (U.S. 7,371,612).

11. Ball discloses the elements stated in paragraph 7 of this office action, but does not explicitly state that its tape is a reel. Examiner takes official notice that reels are well known in the art for providing tape material to support chips during dicing. As such, it would have been obvious to one of ordinary skill in the art to utilize a tape reel in order to provide an alternate dicing tape for dicing of the wafer.

12. Claims 6, 7, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over. Ball (U.S. 7,371,612).

13. Ball discloses the elements stated in paragraph 7 of this office action, but does not disclose the claimed dimensions of the chips.

14. However, applicant has not disclosed that the dimensions are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. As such, the selected dimensions would have been obvious to one of ordinary skill in the art, since it has been held that mere dimensional limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See, for example, *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

Response to Arguments

15. Applicant's arguments with respect to his amended claims have been considered but are moot in view of the new ground(s) of rejection. With respect to applicant's contention that one of ordinary skill would not construe adie as having a substrate, examiner respectfully disagrees. There are countless references as exemplified by nwley cited Gerritsen et al. (U.S. 2003/0207569) that establish a chip formed of a e.g. "silicon substrate".

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art in Skrtle (U.S. 5,199,564) discloses the the common practice of transporting multiple chips on carrier tapes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES M. MITCHELL whose telephone number is (571)272-1931. The examiner can normally be reached on M-F 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mathew Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2813

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

February 1, 2009
/James M. Mitchell/
Examiner, Art Unit 2813